Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: X 30901 **Date: 26/12/2012**

Subject Name: Basic Electronics

Time: 10.30 am - 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain forward and reverse characteristics of PN junction diode. Also explain its current components during forward and reverse bias.	**07**
	(b)	Explain construction and working of PNP & NPN transistor.	**07**
Q.2	**(a)**	Explain full wave rectifier with centre tape and derive its output equation.	**07**
	(b)	Explain shunt clipper circuit with bias and no bias.	**07**
		OR	
	(b)	Explain diode ideal and real characteristics with equivalent circuit.	**07**
Q.3	**(a)**	Give the comparison between different transistor configurations.	**07**
	(b)	Explain about photo diode and photo transistor.	**07**
		OR	
Q.3	**(a)**	Explain half wave rectifier circuit with inductive and capacitive filter.	**07**
	(b)	Explain series and shunt clamper circuit using diode.	**07**
Q.4	**(a)**	Give the comparison between half-wave rectifier, full-wave rectifier with centre tape and full-wave bridge rectifier.	**07**
	(b)	Explain the input and output characteristics of CB configuration of transistor.	**07**
		OR	
Q.4	**(a)**	Why the stability of operating point is necessary when transistor is used as amplifier.	**07**
Q.4	**(b)**	Explain the hybrid model for CE configuration of transistor and obtain its parameter.	**07**
Q.5	**(a)**	Explain class A and class B amplifier using transistor.	**07**
	(b)	Explain transistorized push-pull amplifier.	**07**
		OR	
Q.5	**(a)**	Explain construction of JFET and define its all parameters.	**07**
	(b)	Explain different bias compensation techniques used for transistor operating point stability.	**07**

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